

(c) REMARKS

The claims are 16 and 18, with claim 16 being independent. Claim 16 has been amended to better define the intended invention. New claim 18 has been added. Reconsideration or consideration, as the case may be, of the claims is requested.

Amended claim 16 is supported by claim 17 and the description on page 31, line 18 to page 32, line 15 and page 39, line 2 to page 40, line 6. New claim 18 is supported by the description at page 29, lines 13-21 and the Examples and the like.

Claims 1-4, 6, 8 and 16-17 were rejected as obvious over Canon Kabushiki Kaisha, EP 1243624 (EP'624) in view of Okuda '889 and Sato, JP '828. The rejection is respectfully traversed.

Prior to addressing the grounds of rejection applicants wish to briefly review certain key features and advantages of the present claimed invention.

The present invention relates to a process for producing a three-dimensional pattern as set forth in claim 16. A characteristic feature of the claimed process for producing a three-dimensional pattern is that when applying two liquid compositions having different colors to a recording medium, a second liquid composition is applied after imparting a thermal stimulus and an electromagnetic wave stimulus to a first liquid composition previously applied.

Initially, a thermal stimulus is imparted to an applied first liquid composition to increase the viscosity of the applied liquid composition, thereby forming a three-dimensional basic pattern. In the Examples of the subject application, the substrate (recording medium) is cooled to 0°C to impart the thermal-based stimulus, thereby forming a three-dimensional basic pattern. Next, a non-contact electromagnetic wave stimulus is

applied to the three-dimensional basic pattern. The two stimuli are applied in this order to increase the strength of the three-dimensional basic pattern to facilitate completion of a base of the three-dimensional pattern.

Thus, when applying a liquid composition having a different color, bleeding, which normally takes place between liquid compositions having different colors, can be suppressed, since the previously applied liquid composition is sufficiently solidified to resist bleeding. Additionally, the thus-obtained three-dimensional pattern has excellent impact resistance.

In contrast to the present invention, EP 1243624 (Kabushiki) discloses a stimuli-responsive composition containing a block polymer and a solvent. Kabushiki EP '624 discloses that the block polymer changes its properties by application of a stimulus.

JP 2003-345828 (Sato) discloses that a block polymer has a polyalkenyl ether or a polyoxyalkylene as the repeating unit structure. US 2003/0122889 (Okuda) discloses ejecting liquid droplets to a substrate (recording medium) to form a fine pattern. Okuda also discloses that the liquid droplets contain a UV curable resin, which is cured on the substrate, and discloses that inks of four colors are applied such that the dots overlap with each other.

However, the key features of the present invention are not obtained even when these cited references are combined. Therefore, no prima facie case of obviousness is raised.

Kabushiki EP' 624 merely teaches that imparting stimulus to the block polymer causes a phase change of the composition. Although Kabushiki mentions that two or more stimuli may be applied (par.[0028]), Kabushiki does not teach or suggest the

instant specific combinations of the stimuli and does not teach or suggest the instant sequence for applying the stimuli.

Sato merely teaches the repeating unit structure of the block polymer.

Okuda does not teach curing the four inks between the applications of the inks. Regarding curing, Okuda merely discloses that the liquid droplets contain a UV-curable resin. Thus, Okuda does not teach or suggest forming a three-dimensional basic pattern by a thermal stimulus and then forming a base of the three-dimensional pattern by an electromagnetic wave stimulus.

As described above, none of the cited references teaches or suggests the key features of applying two liquid compositions having different colors to a recording medium, where the second liquid composition is applied after imparting a thermal stimulus and an electromagnetic wave stimulus to the first liquid composition. The references fail to teach the benefits gained by this sequence.

Furthermore, none of the cited references teaches or suggests the feature of claim 18 where the liquid compositions having different colors are a water-based liquid composition and an oil-based liquid composition.

US 6,233,424 (Mohri) does not remedy the defects and deficiencies of the cited references.

For the foregoing reasons, the present invention is not rendered obvious over the cited references, alone or combined.

The amendment should be entered, the final rejection withdrawn, the claims should be allowed and the case passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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